

1. Which object has the greatest inertia?

- 1) a 5.0-kg object moving at a speed of 5.0 m/s
- 2) a 10.-kg object moving at a speed of 3.0 m/s
- 3) a 15-kg object moving at a speed of 1.0 m/s
- 4) a 20.-kg object at rest

2. A man standing on a scale in an elevator notices that the scale reads 30 newtons greater than his normal weight. Which type of movement of the elevator could cause this greater-than-normal reading?

- 1) accelerating upward
- 2) accelerating downward
- 3) moving upward at constant speed
- 4) moving downward at constant speed

3. If the sum of all the forces acting on a moving object is zero, the object will

- 1) slow down and stop
- 2) change the direction of its motion
- 3) accelerate uniformly
- 4) continue moving with constant velocity

4. Compared to 8 kilograms of feathers, 6 kilograms of lead has

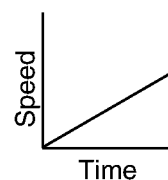
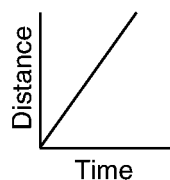
- 1) less mass and less inertia
- 2) less mass and more inertia
- 3) more mass and less inertia
- 4) more mass and more inertia

5. Compared to the inertia of a 0.10-kilogram steel ball, the inertia of a 0.20-kilogram Styrofoam ball is

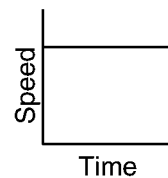
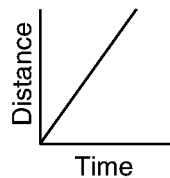
- 1) one-half as great
- 2) twice as great
- 3) the same
- 4) four times as great

6. Which two graphs represent the motion of an object on which the net force is zero?

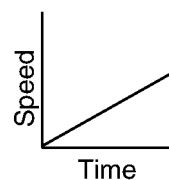
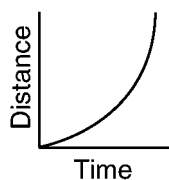
1)



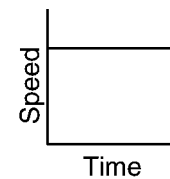
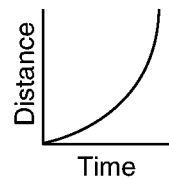
2)



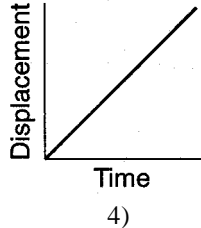
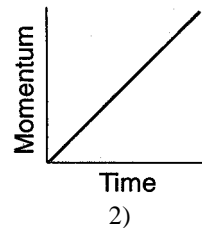
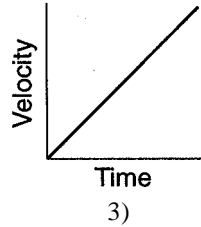
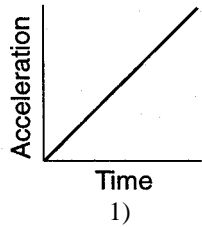
3)



4)



7. Which graph best represents the motion of an object that has *no* unbalanced force acting on it?



8. A 60-kilogram student jumps down from a laboratory counter. At the instant he lands on the floor, his speed is 3 meters per second. If the student stops in 0.2 seconds, what is the average force on the student?

- 1) 1×10^{-2} N
- 2) 1×10^2 N
- 3) 9×10^2 N
- 4) 4 N

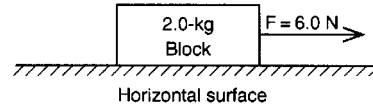
9. A spring scale reads 20. Newtons as it pulls a 5.0-kilogram mass across a table. What is the magnitude of the force exerted by the mass on the spring scale?

- 1) 49 N
- 2) 20. N
- 3) 5.0 N
- 4) 4.0 N

10. When a force of 50 Newtons acts on a mass of 10 kilograms, the resulting acceleration will be

- 1) 500 m/s^2
- 2) 60 m/s^2
- 3) 40 m/s^2
- 4) 5 m/s^2

11. The diagram below shows a 2.0-kilogram block being moved across a frictionless horizontal surface by a 6.0-newton horizontal force.



What is the magnitude of the acceleration of the block?

- 1) 0.33 m/s^2
- 2) 6.0 m/s^2
- 3) 3.0 m/s^2
- 4) 12 m/s^2

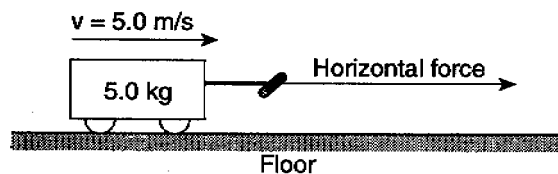
12. An unbalanced force is applied to a mass, producing an acceleration. If the same unbalanced force is applied to a mass one-half as large, the resulting acceleration will be

- 1) the same
- 2) twice as great
- 3) one-half as great
- 4) four times as great

13. A man weighs 900 Newtons standing on a scale in a stationary elevator. If some time later the reading on the scale is 1200 Newtons, the elevator must be moving with

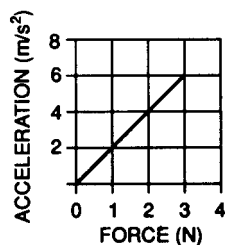
- 1) constant acceleration downward
- 2) constant speed downward
- 3) constant acceleration upward
- 4) constant speed upward

14. A horizontal force is used to pull a 5.0-kilogram cart at a constant speed of 5.0 meters per second across the floor, as shown in the diagram below.



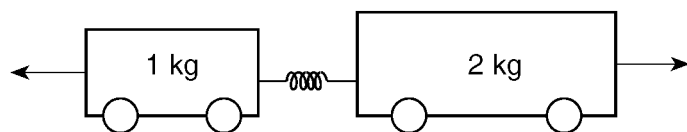
If the force of friction between the cart and the floor is 10. Newtons, the magnitude of the horizontal force along the handle of the cart is

- 1) 5.0 N
 - 2) 10. N
 - 3) 25 N
 - 4) 50. N
15. In the graph below, the acceleration of an object is plotted against the unbalanced force on the object.



What is the object's mass?

- 1) at rest
 - 2) accelerating upward
 - 3) accelerating downward
 - 4) moving downward at constant speed
17. Two carts are pushed apart by an expanding spring, as shown in the diagram below.



If the average force on the 1-kilogram cart is 1 newton, what is the average force on the 2-kilogram cart?

- 1) 1 N
 - 2) 0.0 N
 - 3) 0.5 N
 - 4) 4 N
18. A man is pushing a baby stroller. Compared to the magnitude of the force exerted on the stroller by the man, the magnitude of the force exerted on the man by the stroller is
- 1) zero
 - 2) smaller, but greater than zero
 - 3) larger
 - 4) the same
19. A man weighing 800 Newtons is standing on a chair. In order to support the man, the chair is exerting a force of
- 1) less than 800 N
 - 2) greater than 800 N
 - 3) 800 N

20. A baseball bat moving at high velocity strikes a feather. If air resistance is neglected, compared to the force exerted by the bat on the feather, the force exerted by the feather on the bat will be

- 1) smaller
- 2) larger
- 3) the same

Answer Key
FORCES REVIEW WORKSHEET 1 [Dec 02, 2008]

1. 4

2. 1

3. 4

4. 1

5. 2

6. 2

7. 4

8. 3

9. 2

10. 4

11. 3

12. 2

13. 3

14. 2

15. 3

16. 3

17. 1

18. 4

19. 3

20. 3
